frequency subwoofer

INSTRUCTION & INSTALLATION MANUAL

www.fliaudio.co.uk

Model: FLI Frequency 10, 12

For best connections and performance use only FLI cabling and accessories

OWNERS MANUAL

Model: FLI Frequency 10 & 12

Congratulations on purchasing your FLI Frequency subwoofer. Please read this manual in order to fully understand how to get the best results from your subwoofer and ensure that all advice on how to look after the Subwoofer is followed.
Thank you for buying FLI. We hope you enjoy listening to your product as much as we enjoyed creating it.

Limited Warranty

All FLI goods are covered by a full twelve months warranty. Valid from the date of the original receipt and proof of purchase. In order to validate this warranty, the warranty card should be returned to FLI within seven days of the original purchase date. The original receipt and packaging should also be kept for this twelve month period.

If at any stage during the warranty period you have a problem with the product then it should be returned to the point of purchase in its original packaging, complete and with no items missing.

If the store is unable to fix the product it may have to be returned to FLI this process takes around 7 working days.

A full description of FLI's warranty information can be found on our website:

www.fliaudio.co.uk/warranty

A written version can also be obtained from
FLI warranty department
PO Box 11000
B75 7WG

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We reserve the right to make needed changes or improvements to the product , without informing the customer about this in advance.

Run in procedure

FLI recommends that you follow the run in procedure for the subwoofer detailed below.
When your Subwoofer is used for the first time, like most brand new items it is naturally very stiff and rigid. It will take time for the moving parts of this Subwoofer to loosen up before the subwoofer will be ready to deliver its full potential.

For the first 30 hours it is recommended that you play the subwoofer initially at low to medium volumes, gradually increasing t he volume level as time progresses.

As a guide, if you listen to your subwoofer for 1 hour every day it will take a month for the subwoofer to run in properly.

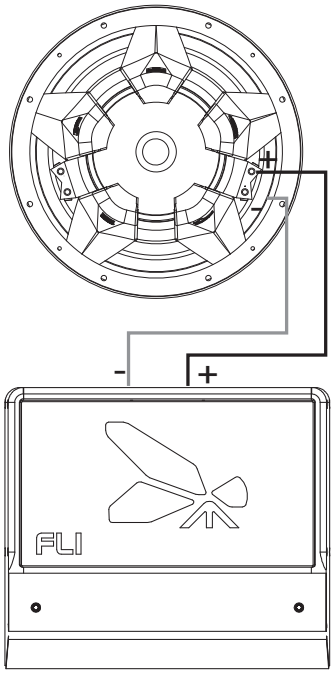
You will notice a big change in the sound of the subwoofer over this period. As the spider and surround begin to run in the sou nd will get deeper and harder, also the output of the subwoofer will increase as the suspension loosens up.

The Subwoofer is like your car's engine, it needs a few thousand miles before you can drive it to its full potential. Driving it into the redline from the first day will mean engine damage is certain and will not be covered by warranty.

Failure to follow this simple procedure is the most common reason for a subwoofer to fail after a very short period of time.

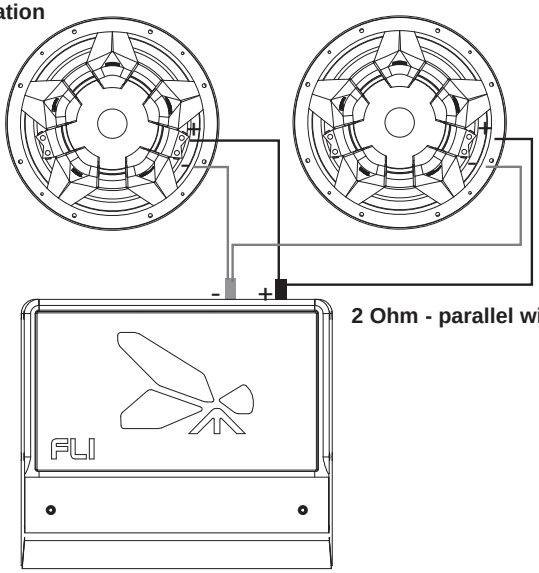
Wiring options

single woofer configuration



4 Ohm - mono wiring

Twin woofer configuration



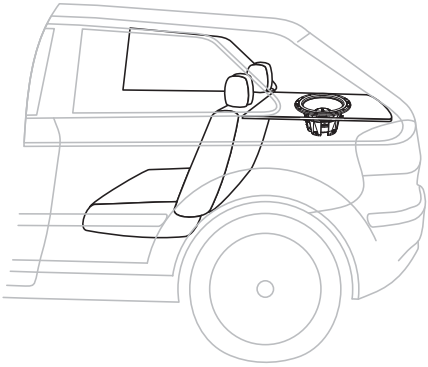
2 Ohm - parallel wiring

Installation

The FLI Frequency subwoofer can be installed in a variety of different ways, the most suitable will depend upon your application.

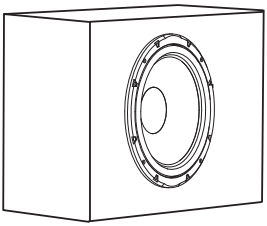
Free-air installation

The FLI Frequency Subwoofer can be mounted free-air, but this does not mean that the woofer can work without any form of enclosure. What it does mean is that the enclosure can be very large and therefore the subwoofer can utilise the vehicles boot as an enclosure.
The Subwoofer needs to be mounted to a rigid panel as excess vibration will result in poor sound quality. The panel or baffle, should also seal the output from the front of the Subwoofer from the output from the rear otherwise poor sound quality, known as phase error, will occur. This simply means that the output from the rear of the woofer will cancel out the output from the front resu lting in a loss of bass.
As the enclosure in free-air applications is so large it is worth noting that the power handling of the Subwoofer is reduced to half that of the same woofer in a measured enclosure. Please take this into account when choosing your amplifier.
The sound quality of a free-air mounted Subwoofer will not match that of the same subwoofer mounted in a measured enclosure. However in applications where building a traditional enclosure is impossible, free-air mounting will add increased bass response to your system.



Sealed enclosure installation

The most basic and simple of all speaker enclosures is the sealed enclosure otherwise referred to as an acoustic suspension design. They are called acoustic suspension enclosures because the air inside the box acts like a brake to control the woofer. The sealed enclosure is the easiest design to build and tune, as long as you work within the minimum and maximum recommended volumes you cannot get it wrong. The smaller enclosures produce a tighter punchy bass, the larger enclosures produce a deeper bass. Sealed enclosures offer high power handling, tight response and smooth low end roll off and cone motion is better controlled at all frequencies because of the constant pressure on the back of the woofer.
Sealed enclosures are ideally suited to rock, jazz and live music.

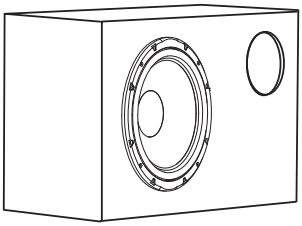


PRODUCT	TIGHT BASS	DEEP BASS
Frequency 10	1.0 cu.ft	1.5 cu.ft
Frequency 12	1.5 cu.ft	2.0 cu.ft

For twin enclosures simply double the volume. E.G. 2 x FLI 10 in deep bass enclosure will be 3.00cuft

Ported enclosure installation

A ported or vented enclosure is not much more complex than a sealed design. It consists of a box with a hole in it.
The vented enclosure has to be correctly designed in order to function correctly. The vent in the enclosure interacts with the air in the cabinet and the woofer to increase output and reduce cone excursion at and around the tuning frequency.
At the tuning frequency of the enclosure almost all of the bass is being produced by the vent, not the woofer. It is more difficult to achieve good performance as the enclosure volume and port volume are critical but the results are worth it as the ported box is up to 3 times as loud as the same woofer in a sealed box. It is also possible with the correct tuning to add a “bump” in the response of the enclosure to boost bass at a preferred frequency. Vented enclosures are best suited to dance, R&B, electronically produced music and high SPL applications.



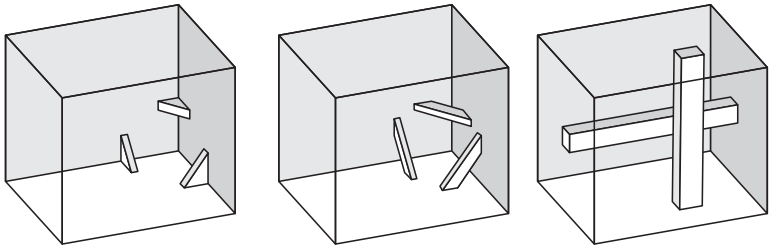
PRODUCT	VOLUME	PORT
Frequency 1	1.0 cu.ft	1 x 3” port, 10” length
Frequency 12	1.5 cu.ft	1 x 3” ports, 10” length

For twin enclosures simply double both the volume and the porting. E.G. for 2 x Frequency 10 the enclosure will be 2cuft with 2 x 3” ports
Many other ported options exist, please contact FLI for more information

Enclosure construction

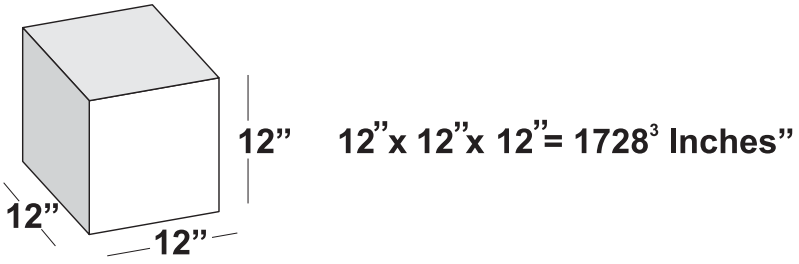
Use at least 3/4 inch MDF (medium density fibreboard) or Birch ply to construct your enclosure.
It is recommend that the panels are glued, screwed and braced with sections of the same material
you have used to build the enclosure from. The BlackAir woofer is capable of producing internal pressures that can literally blow apart badly made enclosures, so great care needs to be taken with the construction and bracing of your enclosure. It is also worth sealing the joints with a silicone sealer once the glue has dried to make a perfect airtight seal.

NOTE- Do not screw the Subwoofer into the enclosure within 24 hours of applying silicone sealer to the joints.
The gases given off as the silicone cures can perish the surround of the Subwoofer causing a non warranty failure.



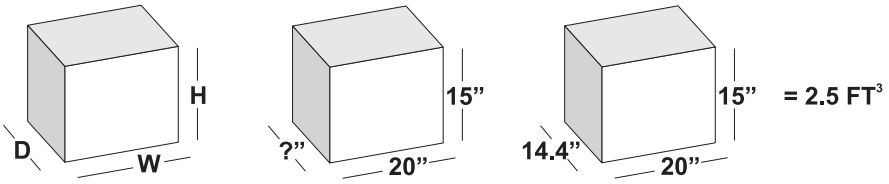
Enclosure Volume

To work out the volume required for your enclosure please refer to recommended enclosure volumes specified for your Subwoofer. These are listed in cubic feet. To convert cubic feet to litres multiply the cubic feet by 28.3. If you use this formula calculating your enclosure size will be easy .1 cubic foot is expressed as 12” x 12” x 12” = 1728 cubic inches



If we require a volume of 2.5cuft then we multiply this by 1728 2.5 x 1728= 4320 cubic inches.

We now take 2 known enclosure dimensions that we will use, e.g height and width and divide this figure by them which will give us the depth, for example our height is 15", our width is 20".

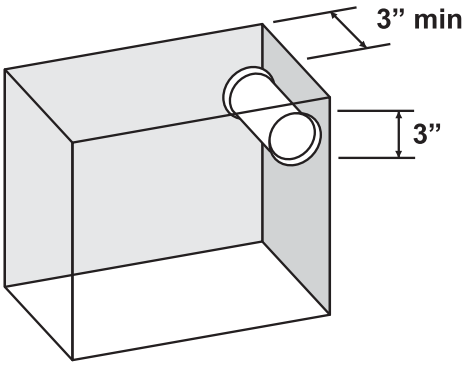


So our depth is 14.4" for this enclosure.

Note : this formula is for the INTERNAL dimensions, please add the thickness of the material used to construct the enclosure to the formula to give you the outside dimensions.

So assuming we are using 1 inch material we need to add 2 thicknesses to each internal dimension to allow for material top and bottom, so the external dimensions for this enclosure would be 17 x 22 x 16.4 inches.

The displacement of the woofer and the displacement of the port must also be added to the required volume before you calculate the required sizes needed to build your enclosure.



NOTE- When using a port you must leave a gap at least equal to the shortest measurement of the port between the rear of the enclosure and the port.

notes

FEATURES

- Component subwoofer
- Rubber gasket adds style and provides an air tight seal for the subwoofer
- Electroplated IMPP woofer cone delivers fast articulate bass
- Butyl rubber surround delivers improved low frequency response
- Rubber magnet boot protects and dresses the motor
- Spring loaded nickel plates terminals allow heavy gauge wire to be connected directly to the voice coil
- Single 4Ω voice coil

FF10

Peak power	1000 watts
RMS power	300 watts
Min. input	150 watts RMS
Frequency response	30Hz – 1.7kHz
Mounting depth	150mm
Mounting diameter	235mm

FF12

Peak power	1200 watts
RMS power	400 watts
Min. input	200 watts RMS
Frequency response	25Hz – 1.5kHz
Mounting depth	170mm
Mounting diameter	285mm

In order to protect your purchase and aid your warranty please fill in the following form and keep it safe for your future reference:

www.fliaudio.co.uk

Model Number:

Serial Number:

Purchased From:

Date of Purchase:

KEEP IT SAFE
Staple your receipt here:

Accessories can be ordered separately from the FLI website www.fliaudio.com

Only available in the UK If outside uk please contact your dealer or distributer from the FLI website

FLI Line Level Convertor
If your current head unit has no amplifier pre outputs this FLI Line Level Convertor can be connected directly to your rear speaker wires to provide a stereo set of RCA connectors which can be connected directly to an amplifier.

FIREFLI LED RCA interconnect
High quality 2 Channel RCA interconnect featuring FIREFLI mega brite LED RCA end plugs
Available in 1 metre and 5metre lengths

FLI RCA-Y interconnect
High quality RCA Y-lead interconnect
Converts stereo RCA output to 4 channel output
2 female RCA plugs to 4 male RCA plugs

FLI Stickers
FLI stickers available in white or silver 5" 10" 15"

Order online or call sales on 0870 765 8423 . All items above come with free next day delivery.

Accessories can be ordered separately from the FLI website www.fliaudio.com

Only available in the UK If outside uk please contact your dealer or distributer from the FLI website

FLI Power Capacitor
The FLI powercap, a 1 farad, high specification power capacitor is another great addition to our range. This is an essential item for maximum power delivery.

Stores added power for when your system really needs it

10 Gauge FLI Wiring Kit
For use with Car audio systems up to 1000 watts. Kit contents:
5 metre 10 AWG power cable
1 metre 10AWG ground cable
5 metre RCA interconnect
5 metre remote turn on cable
8 metre speaker cable
Inline ATC fuse holder, 30 amp ATC blade fuse, Fitment pack,

For use with Stereo amplifier systems

AK8 – 8 AWG amplifier wiring kit
For use with Car audio systems up to 1500 watts Kit contents:
5 metre 8 AWG power cable
1 metre 8AWG ground cable
5 metre FIREFLI LED RCA interconnect
5 metre remote turn on cable
8 metre speaker cable
AGU glass fuse holder, 60 amp AGU glass fuse, Fitment pack

For use with high power stereo amplifier systems

AK4 – 4 AWG amplifier wiring kit
For use with Car audio systems up to 2000 watts Kit contents:
5 metre 4 AWG power cable
1 metre 4AWG ground cable
5 metre FIREFLI LED RCA interconnect
5 metre remote turn on cable
8 metre speaker cable
AGU glass fuse holder, 80 amp AGU glass fuse Fitment pack

For use with Bass amplifier systems

Order online or call sales on 0870 765 8423 . All items above come with free next day delivery.